

**HP Vantera Helps Companies with Deregulation**

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From the pages of Control Engineering

**HP Vantera Helps Companies with Deregulation****Dave Harrold, CONTROL ENGINEERING -- 5/1/1998**

As electric utilities become deregulated or privatized, they will have a much greater need for fast and efficient access to information about their operations and how customers use their services.

**YEAR OF THE NETWORK**

- Networks and communication
- Data acquisition
- Energy management
- Internet

At the same time, deregulation will increase user awareness of the need to review and understand consumption histories, usage characteristics, and the ability to manage load curves. One of the realities many companies are already discovering is they do not have real-time access to energy usage data.

Hewlett Packard (HP, San Diego, Calif.) provides a data acquisition hardware and software platform called Vantera that provides end-user companies, enhanced energy service providers, and electric utilities a valuable tool capable of providing instantaneous information about energy usage. It can incorporate information from "smart" sensors tied into the network, following several industry standards.

As an example, a manufacturer could install a system on its corporate intranet, which aggregates energy usage and billing information from every site in the enterprise.

Energy service providers can use the HP Vantera to provide customers with real-time pricing, billing aggregation, energy-use accounting, energy management, and load profiling.

HP Vantera provides large end-user companies the ability to see precisely when and where they use electricity, allowing them the opportunity to shift usage to more cost-effective times or more efficient equipment.

Electrical utilities can use the software platform to detect illegal siphoning of electricity and to automate substations. Designed for any commercial and industrial enterprise that uses an Ethernet with Internet protocol (IP) network as its communications infrastructure, the HP Vantera serves as an IP node on the enterprise network.

**Relies on standards**

HP Vantera incorporates existing standards, such as Common Object Resource Broker Architecture (CORBA), Open Data Base Communications (ODBC), and OLE for process control (OPC). It has also been developed using:

- IEEE-P1451.1 draft standard, which defines a model for communicating with sensors and actuators;
- IEEE-1451.2 standard, which provides a model for connecting intelligent transducers to microprocessors through a digital interface; and
- HP Vantera information backplane standard—a set of definitions, standards, and protocols, developers may use to insure connectivity.

Combined, these standards make HP Vantera accessible to any hardware or software developer who wants to design compatible product. Initially targeted to electrical energy monitoring and management, the software platform can be connected to any sensor or transducer which conforms to the IEEE-1451 standards, making it suitable for integrated utility monitoring applications.

**How it works**

Using either direct or wireless connections, an HP Vantera node is connected to the corporate Ethernet intranet. Intelligent energy measurement sensors, connected to the node, use the information backplane to place measurement values in its real-time data manager. Utilizing HP's enterprise link software, HP Vantera provides energy consumption information directly to enterprise applications, such as Oracle databases and SAP's R/3. For quick views of energy consumption data using standard web browsers, HP Vantera includes a web

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server and informative web pages.

Network broadcast storms, often associated with client/server network architectures, are avoided by using a publish/subscribe messaging model developed by Tibco Inc. (Palo Alto, Calif.). In this messaging architecture, a publisher node places only one message on the network where subscriber nodes read it, and react or reply based on their application program requirements. The publish/subscribe messaging architecture eliminates the need for nodes to know where other nodes are located, and allows nodes to communicate peer to peer.

**\$2,000,000 savings first year**

Specific to utility management applications, HP Vantera can provide the ability to obtain energy usage in real-time; support "inside-the-building" energy management; and reduce installation, operation, and maintenance cost by leveraging existing enterprise technologies.

Bosong Co. (Seattle, Wa.) has already developed a centralized energy management system using components of the HP Vantera and has realized first year savings of \$2 million dollars.

Interprovincial Pipe Line, Inc. (IPL, Edmonton, Alberta, Canada) is using components of HP Vantera to monitor and control energy consumption. IPL expects savings of \$5 to \$10 million on energy costs per year.

While not all companies will choose to become directly involved in the deregulation of energy, all companies could improve the bottom line by focusing on energy management. HP Vantera can play a significant role in the integration between meters and sensors to enterprise information systems thus enabling real-time energy consumption management.

For more information, visit [www.controleng.com/info](http://www.controleng.com/info).

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